



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/465,436	12/16/1999	CHRISTOPHER MIDGLEY	NTK-005.01	8863

25181 7590 07/27/2004

FOLEY HOAG, LLP
PATENT GROUP, WORLD TRADE CENTER WEST
155 SEAPORT BLVD
BOSTON, MA 02110

EXAMINER

ALAM, SHAHID AL

ART UNIT	PAPER NUMBER
----------	--------------

2172

DATE MAILED: 07/27/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/465,436

Applicant(s)

MIDGLEY ET AL.

Examiner

Shahid Al Alam

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6-13, 15-23 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 14 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 13 April 2004, PROSECUTION IS HEREBY REOPENED. The rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. After an Appeal Conference, Conferees decided to withdraw the Finality of the last Office action and therefore, the finality of that action is withdrawn.

3. Applicant's arguments filed 13 April 2004 with respect to claims 1 – 5 have been considered and are persuasive. Therefore, claims 1 – 5 are allowed.

4. With respect to claims 6 – 28, detail action follows:

Saxon's teaching of the selection criteria comprises a "maximum size" threshold with the schedule level. The maximum size threshold indicates a maximum size (capacity of the storage medium) that the save set at the schedule level must not exceed. This parameter is chosen by the system administrator or

Art Unit: 2172

the user, who determines that this is the maximum amount of data that can be backed up (reaching the capacity).

Saxon's teaching states that the method of Saxon proceeds in reverse timestamp order, beginning with the timestamp of the most recent save set as the current timestamp. The total size is compared to the maximum size threshold to determine if the total size is less than or equal to the maximum size threshold. Saxon's teaching shows that processor is comparing with respect to timestamp to determining the maximum size threshold based on condition. Saxon further teaches the backup element includes a backup volume in the form of a tape or diskette.

Anglin, in a back-up system similar to Saxon, teaches the virtual tape server that is associated with a Direct Access Storage Device (DASD) cache. The DASD cache is comprised of a plurality of hard disk drives which are configured into one or more RAID arrays. The tape library can load and eject tape cartridges using a robotic arm, and clean the tape drives. Further, the tape library may include storage management software to monitor the active space on the tape cartridges and schedule reclamations of tape cartridges when the system is less active. A library manager has the ability to install, maintain, configure, and operate the tape library. The library manager consists of a controller (a personal computer, workstation, etc.) which can assume direct control over the tape library.

Iwamoto, in a back-up system similar to Saxon and Anglin, teaches a file management system with a file recovery means for recovering a file by inputting

Art Unit: 2172

history (journal) information containing the later renewal, addition, and deletion of records, to a file backup copy, and reproducing time sequentially the renewal, addition, and deletion of the records. It is also necessary to recover a file which underwent dynamic file expansion, by using a similar file recovery means.

Iwamoto's system capable of dynamically expanding a file while retaining an optimum allocation space efficiency of a data store medium and capable of dynamically expanding a file shared by a plurality of file management systems without any conflict between the systems.

Saxon, Anglin and Iwamoto are combinable because they teach back-up system.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a

Art Unit: 2172

later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6 – 9 and 19 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,758,359 issued to Paul Saxon (“Saxon”) in view of U.S. Patent Number 5,604,900 issued to Kouji Iwamoto et al. (“Iwamoto”).

With respect to claims 6 and 19, Saxon teaches a condition representing a storage capacity of at least one of at least two data storage elements (column 4, line 65 – column 5, line 14); and

based on condition, storing the data on the data storage element associated with an earliest time of storage (column 7, lines 22 – 27).

Saxon's teaching states that the method of Saxon proceeds in reverse timestamp order, beginning with the timestamp of the most recent save set as the current timestamp. The total size is compared to the maximum size threshold to determine if the total size is less than or equal to the maximum size threshold. Saxon's teaching shows that processor is comparing with respect to timestamp to determining the maximum size threshold based on condition.

Saxon does not explicitly teach detecting a condition as claimed.

Iwamoto teaches claimed detecting a condition (column 6, lines 29 – 38; Iwamoto).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Iwamoto with Saxon, combination would

Art Unit: 2172

make a system capable of dynamically expanding a file while retaining an optimum allocation space efficiency of a data store medium and allowing file recovery and job degradation when a failure of a dynamically expanded file or dynamic file expansion itself occurs (column 2, lines 55 – 67; Iwamoto).

As to claims 7 and 20, associating at least one time of storage with the at least two data storage elements (column 4, line 66 – column 5, line 5; Saxon).

As to claims 8 and 21, comparing at least one time of storage with at least two data storage elements; and identifying the data storage element associated with the earliest time of storage (column 5, lines 4 – 14 and column 7, lines 43 – 50; Saxon).

As to claim 9, providing a storage system including the at least two data storage elements and a processor for controlling data storage on the at least two data storage elements (column 5, lines 4 – 14; Saxon).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saxon and Iwamoto and further in view of U. S. Patent Number 6,023,709 issued to Matthew Anglin et al., (“Anglin”).

With respect to claims 10 and 11, Saxon teaches that the backup storage element includes a backup volume in the form of a tape or diskette.

Saxon does not explicitly teach a tape library having a plurality of drive elements and a robotic controller.

As to claim 10, Anglin, in a back-up system similar to Saxon, teaches the storage system includes a tape library system, a hard disk system, read/write CD-ROM system and a RAID system (column 3, lines 25 – 34 and lines 41 – 47).

As to claim 11, Anglin, in a back-up system similar to Saxon, teaches the storage system includes a tape library system having a library of tapes, a tape drive, and a robotic controller for moving tapes between the library and the tape drive (column 3, lines 41 – 60).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine Anglin with Saxon and Iwamoto because the tape library, robotic controller and RAID array provide additional hardware capabilities for the combined system and thus improve its robustness.

Claims 12, 13, 15 – 18, 22 – 23 and 25 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,758,359 issued to Paul Saxon (“Saxon”) in view of U.S. Patent Number 5,604,900 issued to Kouji Iwamoto et al. (“Iwamoto”).

With respect to claims 12, 17, 22 and 27, Saxon teaches a condition representing a storage capacity of at least one of at least two data storage elements (column 4, line 65 – column 5, line 14);

based on condition, storing the data on the data storage element associated with an earliest time of storage (column 7, lines 22 – 27); and

based on whether at least one of the at least two data storage elements includes available capacity, storing the data on the data storage element

Art Unit: 2172

associated with the earliest time of storage (column 5, lines 39 – 45, column 7, lines 28 – 32 and lines 43 – 50).

Saxon's teaching states that the method of Saxon proceeds in reverse timestamp order, beginning with the timestamp of the most recent save set as the current timestamp. The total size is compared to the maximum size threshold to determine if the total size is less than or equal to the maximum size threshold. Saxon's teaching shows that processor is comparing with respect to timestamp to determining the maximum size threshold based on condition.

Saxon does not explicitly teach detecting a condition as claimed.

Iwamoto teaches claimed detecting a condition (column 6, lines 29 – 38; Iwamoto).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Iwamoto with Saxon, combination would make a system capable of dynamically expanding a file while retaining an optimum allocation space efficiency of a data store medium and allowing file recovery and job degradation when a failure of a dynamically expanded file or dynamic file expansion itself occurs (column 2, lines 55 – 67; Iwamoto).

As to claims 13 and 23, associating at least one time of storage with the at least two data storage elements (column 4, line 66 – column 5, line 5; Saxon).

As to claims 15 and 25, based on whether at least one of the at least two data storage elements includes available capacity, storing the data on the at least one data storage element including available capacity (column 5, lines 39 – 45, column 7, lines 19 – 27; Saxon).

Art Unit: 2172

As to claims 16, 18, 26 and 28, storing the data on the at least one data storage element including available capacity until the at least one data storage element reaches capacity (column 7, lines 19 – 32; Saxon).

Allowable Subject Matter

6. Claims 14 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 14 and 24, Applicants' claimed invention including all of the steps of "... detecting a condition representing a data storage capacity of at least one of at least two data storage elements; based on the detected condition, determining whether at least one of at least two data storage elements includes available data storage capacity; based on whether at least one of the at least two data storage elements includes available data storage capacity, storing the data on the data storage element associated with the earliest time of storage" combined with "comparing at least one time of storage associated with the at least two data storage elements and identifying the data storage element associated with the earliest time of storage" would not have been obvious over, nor would have been fairly suggested by the prior art of record.

7. The following is an **examiner's statement of reasons for allowance**:

Claim 1 is allowed over the prior art of record.

Regarding claim 1, Applicants' claimed invention including all of the steps of " . . . a process for storing data, comprising:

providing a back up server having storage for a plurality of data files, providing a long term memory device having a plurality of data storage elements and a processor for coordinating the operation of the plurality of data storage elements, directing the processor to store data on the storage elements and record a time signal representative of the time of storing data, detecting a condition representative of each storage element having reached a data storage capacity, bases on the condition, directing the processor to compare the time signals for each data storage element," and combined with "based on the time signal comparison, directing the processor to store data on the data storage element having the earliest recorded data" would not have been obvious over, nor would have been fairly suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Art Unit: 2172

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (703) 305-2358. The examiner can normally be reached on Monday-Thursday 8:00 A.M. - 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shahid Al Alam
Primary Examiner
Art Unit 2172

21 July 2004